

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2004/001153

A. CLASSIFICATION OF SUBJECT MATTER**IPC7 H01L 33/00, H01L 23/34**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean patents and applications for inventions, since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, D	US 6274924 B (LUMILEDS LIGHTINGS U.S. L.L.C.) 14 AUGUST 2001 see the abstract, figure 2	1-14
A	US 6204523 B (LUMILEDS LIGHTINGS U.S. L.L.C.) 20 MARCH 2001 see the whole documents, figure 1	1-14
A	KR 2001-114224 A (GENTEX CORPORATION) 31 DECEMBER 2001 see figures 16-24	1-14
A	JP 2000-244022 A (NICHIA CHEMICLAS CO. LTD) 08 SEPTEMBER 2000 see the abstract	1-14
A	US 5748658 (MATSUSHITA ELECTRIC INDUSTRIAL CO. LTD) 5 MAY 1998 see the abstract, figure 22	1-14

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

04 SEPTEMBER 2004 (04.09.2004)

Date of mailing of the international search report

07 SEPTEMBER 2004 (07.09.2004)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

KIM, Dong Yup



Telephone No. 82-42-481-5749

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2004/001153

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6274924 B	14.08.2001	GB 2343548 A1 DE 19945675 A1 KR 2000035156 A JP 2000150967 A TW 441045 B	10.05.2000 18.05.2000 26.06.2000 30.05.2000 16.06.2001
US 6204523 B	20.03.2001	DE 19938053 A1 GB 2343549 A1 JP 2000150968 A TW 424339 B US 2001010371 AA US 6590235 B	18.05.2000 10.05.2000 30.05.2000 01.03.2001 02.08.2001 08.07.2003
KR 2001-114224 A	31.12.2001	CA 2373368 AA AU 200038995 A5 AU 200035279 A5 CA 2367011AA WO 200055914 A1 US 2001026011 AA EP 1169735 A1 EP 1169668 A1 US 6441943 BA US 2002154379 AA JP 2002539623 T2 JP 2002539026 T2 US 2002004251 AA US 6335548 BA EP 1169735 A4 EP 1169668 A4 US 6700692 B US 6670207 BA US 2003168670 AA US 2003002179 AA US 6521916 B US 2004084681 AA	21.09.2000 04.10.2000 04.10.2000 21.09.2000 21.09.2000 04.10.2001 09.01.2002 09.01.2002 27.08.2002 24.10.2002 19.11.2002 19.11.2002 10.01.2002 01.01.2002 06.08.2003 13.08.2003 02.03.2004 30.12.2003 11.09.2003 02.01.2003 18.02.2003 06.05.2004
JP 2000-244022 A	08.09.2000	JP 3217322 B	09.10.2001
US 5748658	05.05.1998	JP 06-203403 A	22.07.1994